

## REMARKS

The non-final Office Action mailed February 8, 2005, has been reviewed and carefully considered. Claims 1-17 are pending in the application. Claims 1-7 are withdrawn. Claims 8-17 were rejected. Claims 11, 12, and 16 were objected to. Claims 8, 11, 12, 13, and 16 are amended. Claims 9 and 14 are canceled.

In paragraph 3 on page 2 of the Office Action, the drawings were objected to due to certain informalities.

Applicant respectfully traverses the objection to the drawings. However, in order to advance prosecution of Applicant's Application, Applicant has submitted the attached replacement sheets.

In paragraph 4 on page 3 of the Office Action, claims 11 and 16 were objected to due to certain informalities.

Applicant respectfully traverses the objection to claims 11 and 16. However, in order to advance prosecution of Applicant's Application, Applicant has amended claims 11 and 16 in accordance with Examiner's suggestions. Applicant submits that the amendments to the claims do not narrow or change the scope of Applicant's Application.

In paragraph 5 on page 3 of the Office Action, 8 and 13 were rejected under 35 U.S.C. § 112, second paragraph.

Applicant respectfully traverses the § 112, second paragraph rejection. However, Applicant has amended claims 8 and 13. Applicant submits that the amendments to the claims do not narrow or change the scope of Applicant's Application.

In paragraph 6 on page 4 of the Office Action, claims 8-17 were rejected under 35 U.S.C. § 102(e) over Watanabe (U.S. Patent No. 6,636,391).

Applicant respectfully traverses the § 102(e) rejection. Applicant's claims are directed to a tunnel valve sensor and require at least "a tunnel valve disposed at a first shield layer, the tunnel valve comprising a free layer distal to the first shield layer; a first insulation layer formed over the first shield layer and around the tunnel valve; a flux guide deposited over the first insulation layer, the flux guide being coupled to the tunnel valve at the free layer; a second insulation layer covering the flux guide; and a second shield layer deposited over the second

insulation, wherein the flux guide and the free layer are physically connected, and the flux guide is physically isolated from the first and second shield layers by the first and second insulation layers to prevent current shunts therefrom.”

In particular, Applicant requires that “the flux guide and the free layer are physically connected.”

Watanabe, in contrast, teaches that “magnetic flux guide 10 extends from the air bearing surface 1 in the depth direction 100 and is antiferromagnetically coupled to the first ferromagnetic layer 22 which is the free layer of the GMR sensor film via the nonmagnetic intermediate layer 21.” Column 8, lines 19-23. Throughout the embodiments in Watanabe the flux guide 10 and ferromagnetic free layer 22 are merely antiferromagnetically coupled, and nowhere in Watanabe are the flux guide 10 and ferromagnetic free layer 22 physically coupled. Therefore, Watanabe fails to disclose, teach, or suggest Applicant’s tunnel valve sensor where “the flux guide and the free layer are physically connected.”

Because Watanabe fails to disclose, teach, or suggest at least that the flux guide and the free layer are physically connected, Applicant submits that the § 102(e) rejection is improper and request that the rejection be withdrawn.

Dependent claims 9-12 and 14-17 are also patentable over the references, because they incorporate all of the limitations of the corresponding independent claims 8 and 13. Further dependent claims 29-12 and 14-17 recite additional novel elements and limitations. Applicant reserves the right to argue independently the patentability of these additional novel aspects. Therefore, Applicant respectfully submits that dependent claims 9-12 and 14-17 are patentable over the cited references, and request that the objections to the independent claims be withdrawn.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested. Please charge/credit Deposit Account No. 50-0996 (HITG.063US01) for any deficiencies/overpayments.

Appl. No. 09/902,122  
Amdt. Dated May 9, 2005  
Reply to Office Action of February 8, 2005

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicant's attorney of record, David W. Lynch at 651-686-6633 Ext 116.

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**IN THE DRAWINGS**

Please accept the attached replacement drawings labeled 1 of 7, 2 of 7, 3 of 7, 4 of 7 and 5 of 7.